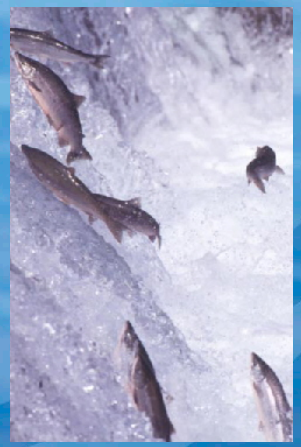
A Summary of Water Supply and Resource Management in Sonoma County

By Sonoma County Water Agency

Chris Delaney



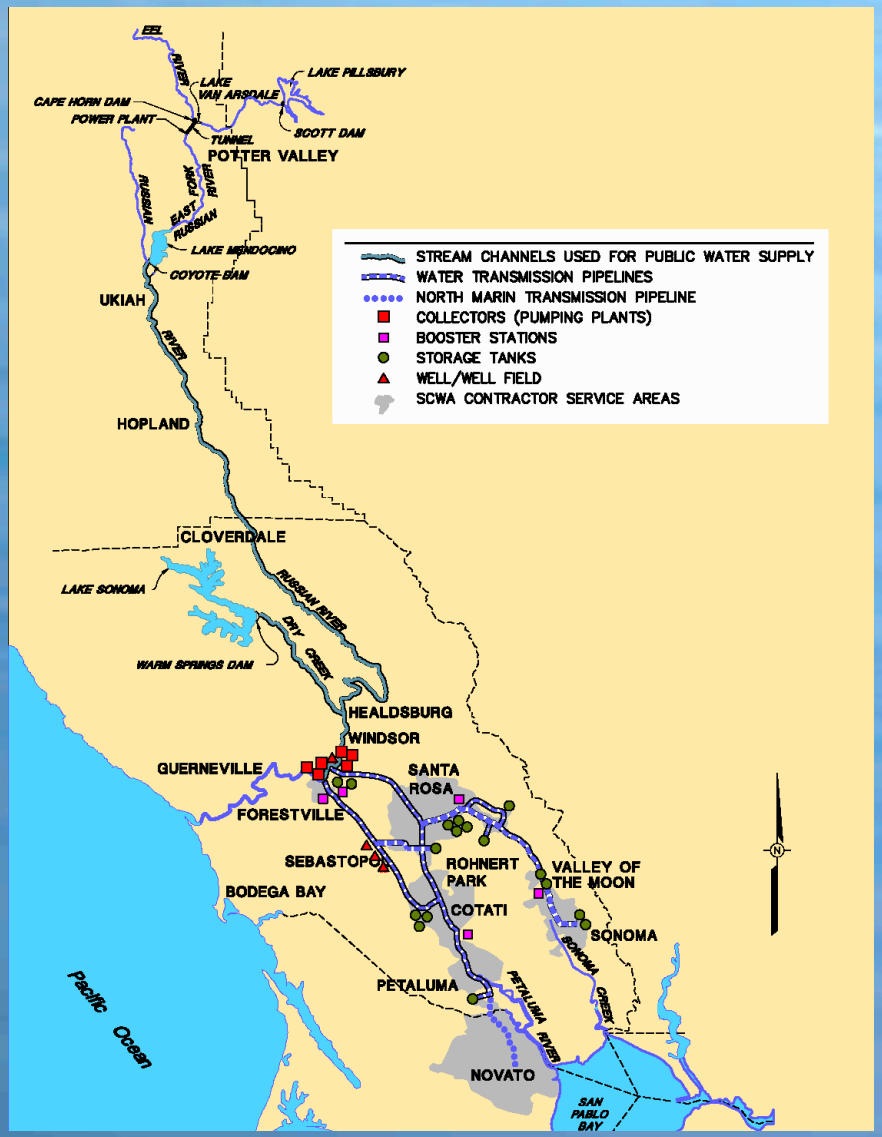
SONOMA COUNTY WATER AGENCY

Presentation Overview

- Description of Regional Water Supply
- Key Projects & Initiatives
- Critical Watershed Issues:
  - Potter Valley Project
  - Lake Mendocino Operations
  - Russian River Flows
- For more information please visit our website

  www.sonomacountywater.org

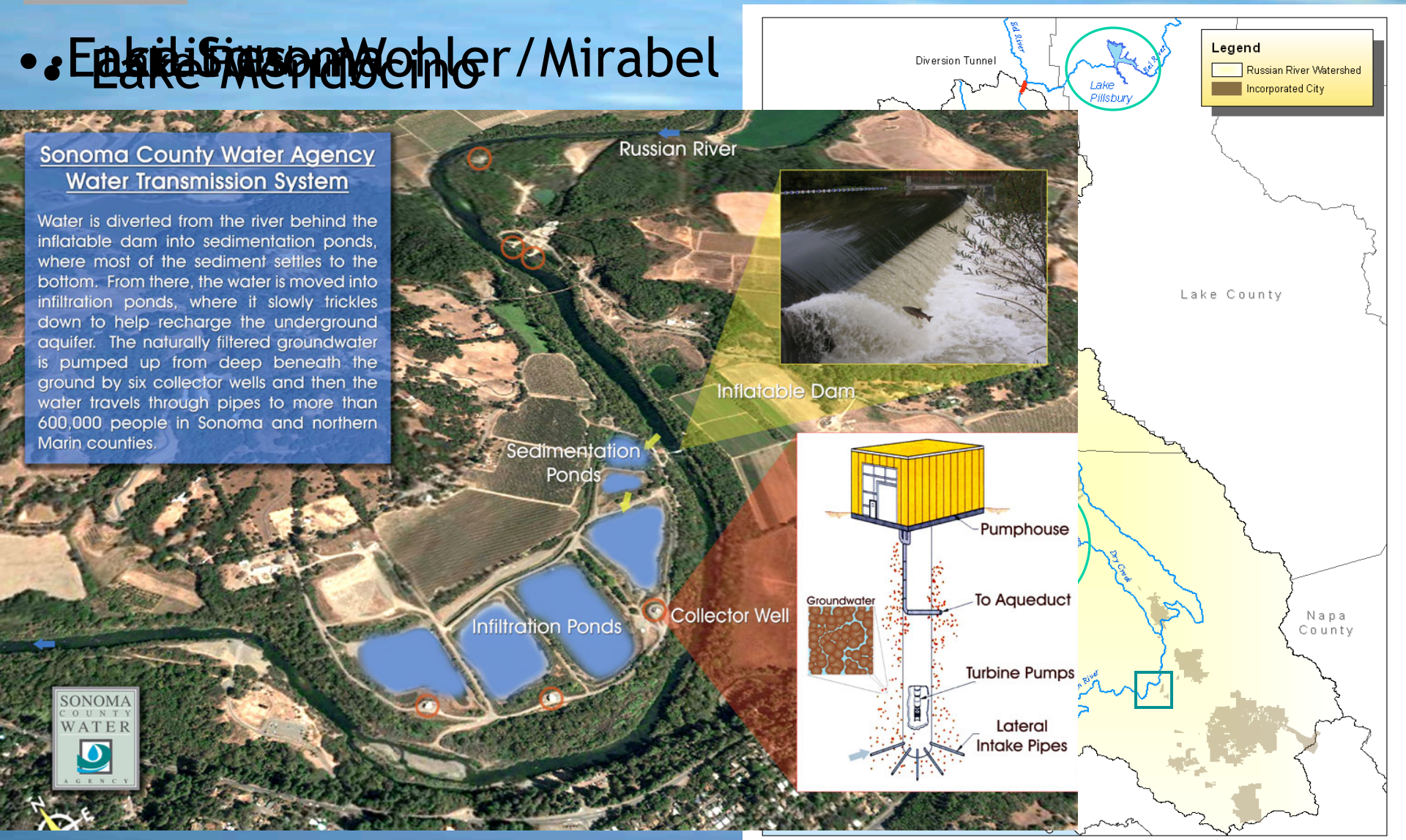
Sonoma County Water Agency - Russian River System



- Wholesale Water Supplier to over 600,000 People in Sonoma & Marin Counties
- 1,500 mi^2 Russian River Watershed
- Primary Source is Russian River with Supplemental Groundwater
- One of the largest riverbank filtration systems in the world
- Responsible for Flood Control and Sanitation in Sonoma County

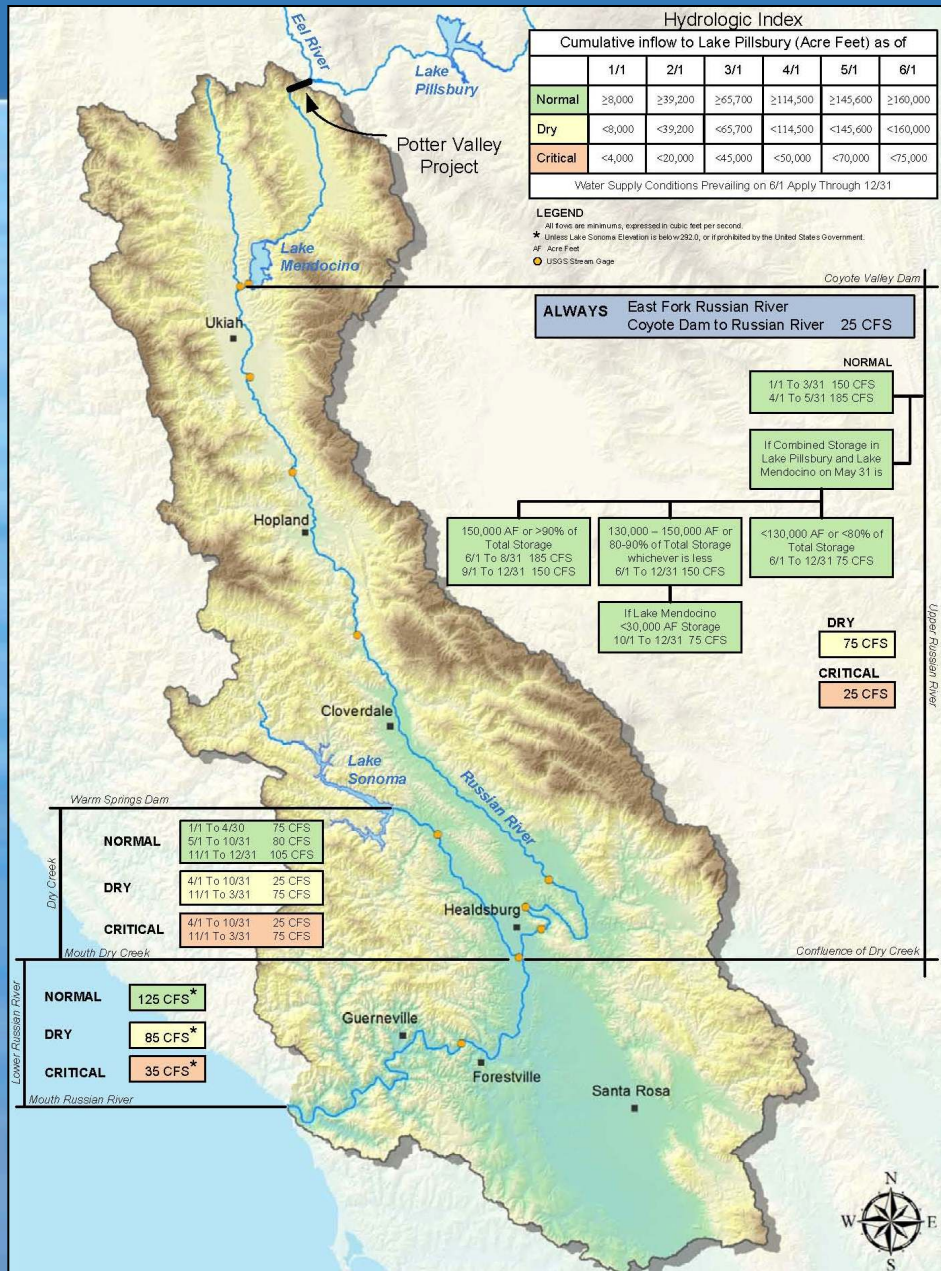
Russian River Watershed

- Eel River/Potter Valley Wohler/Mirabel
- Lake Mendocino



State Water Resources Control Board Decision 1610

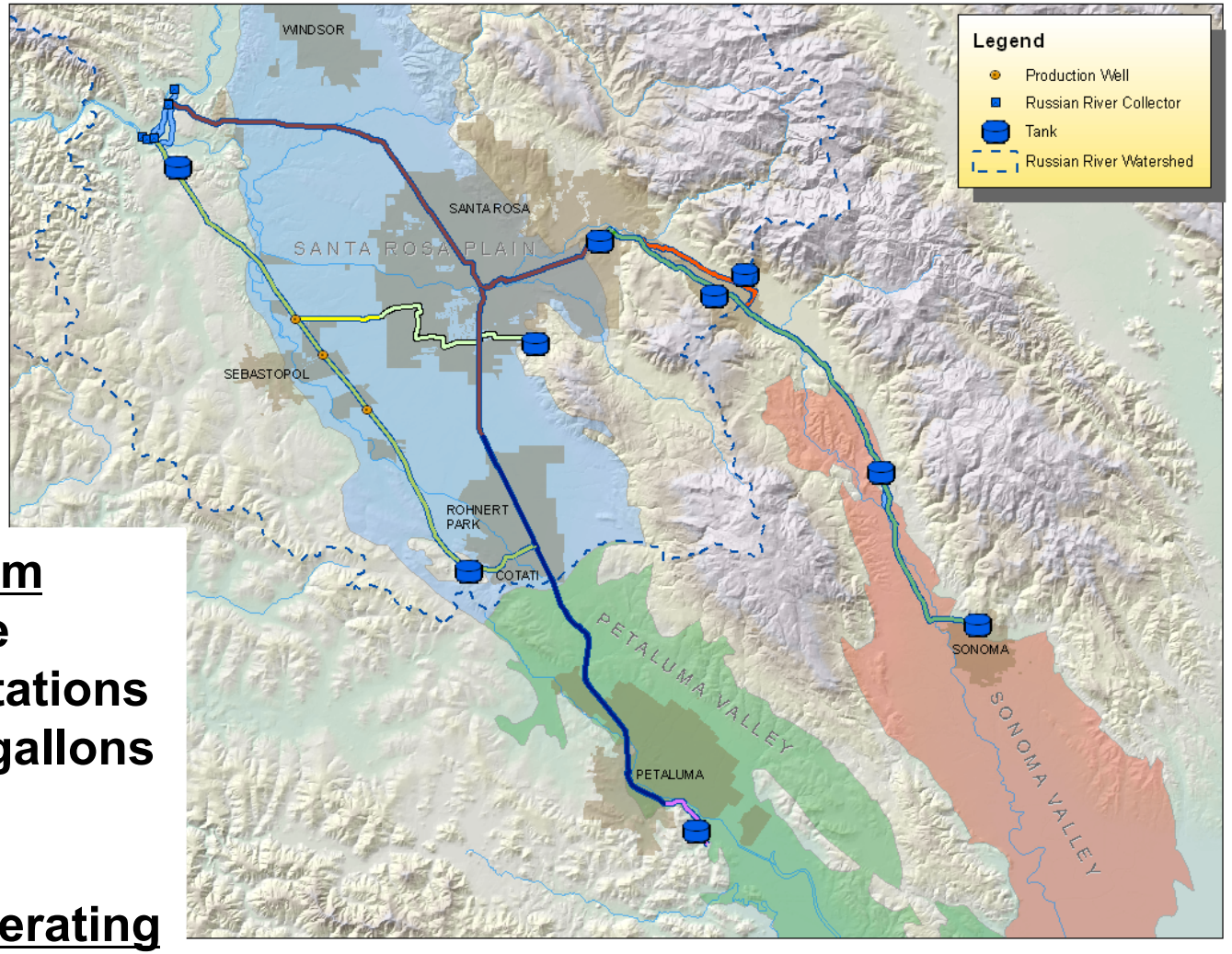
- Adopted April 1986
- Authorized Agency to divert up to 75,000 AF/year
- Sets water year classification based on inflow into Lake Pillsbury (not Russian River Watershed)
- Sets minimum flow requirements
- Developed before ESA listing of Eel and Russian River fish species



Endangered Species Act Compliance – Biological Opinion – September 2008

- **Why**: Three species of fish listed under federal ESA
- **Parties**: US Army Corps of Engineers, SCWA, DFG, Mendocino County Flood Control, & NMFS
- **Major findings**: Continued operations jeopardize coho salmon & steelhead - adversely modifies habitat.
  - D1610 Flows too high: Russian River and Dry Creek
  - Estuary Flood Management

Agency Transmission System



Transmission System

> 80 miles pipeline

6 Booster Stations

129 million gallons storage

Oldest facilities operating since late 1950's

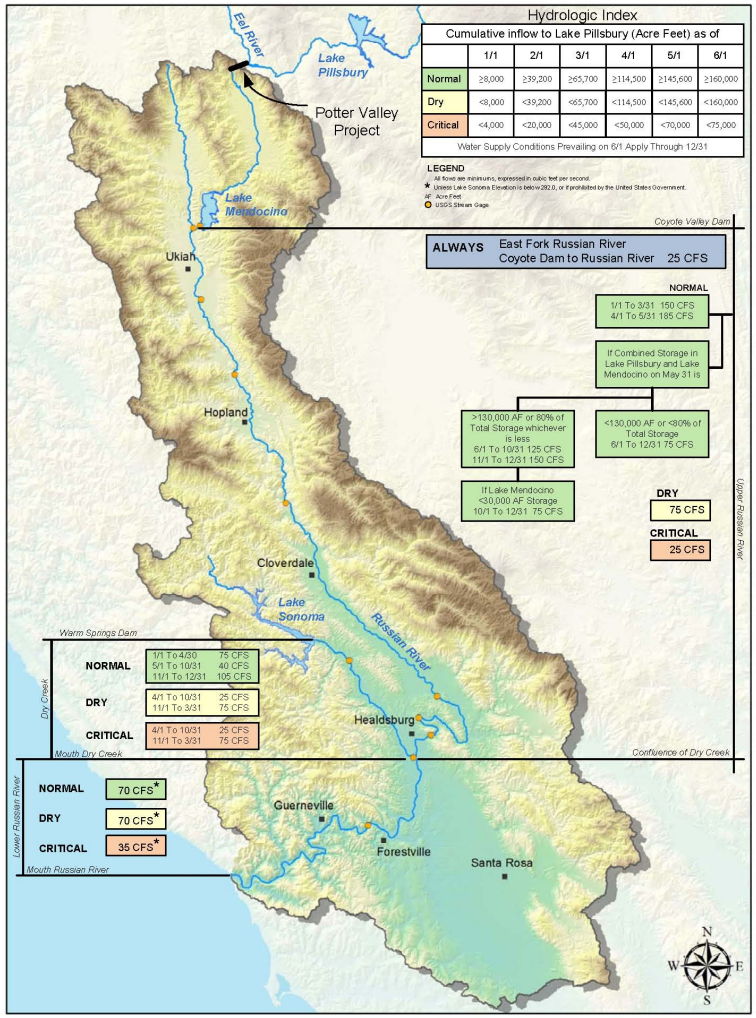
Key Projects and Initiatives
Implementation of Biological Opinion

1. **Modify Decision 1610**
2. **Dry Creek**
   - Habitat Enhancement
   - Bypass Pipeline
3. **Russian River Estuary**
   - Freshwater Lagoon Habitat

- **Over $150M to implement over next 15 years**

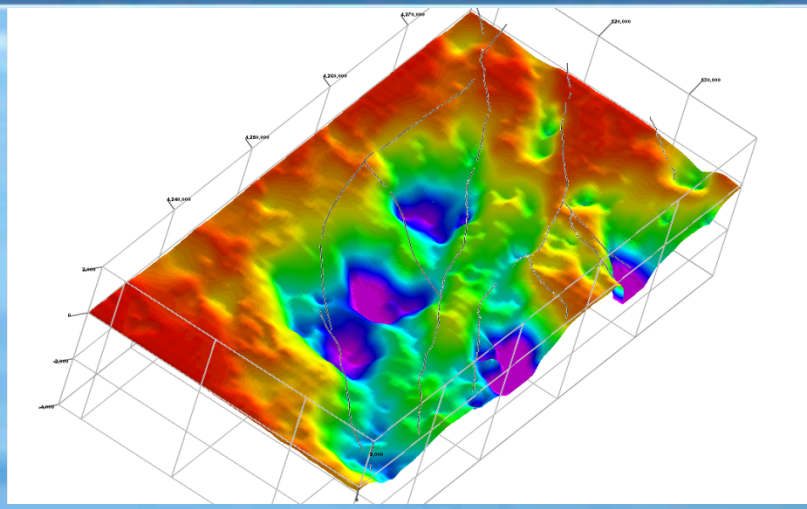
RRIFR
Russian River Instream Flow and Restoration

Biological Opinion Flows / Hydrologic Index D1610



Russian River Basin
Streamflow Requirements

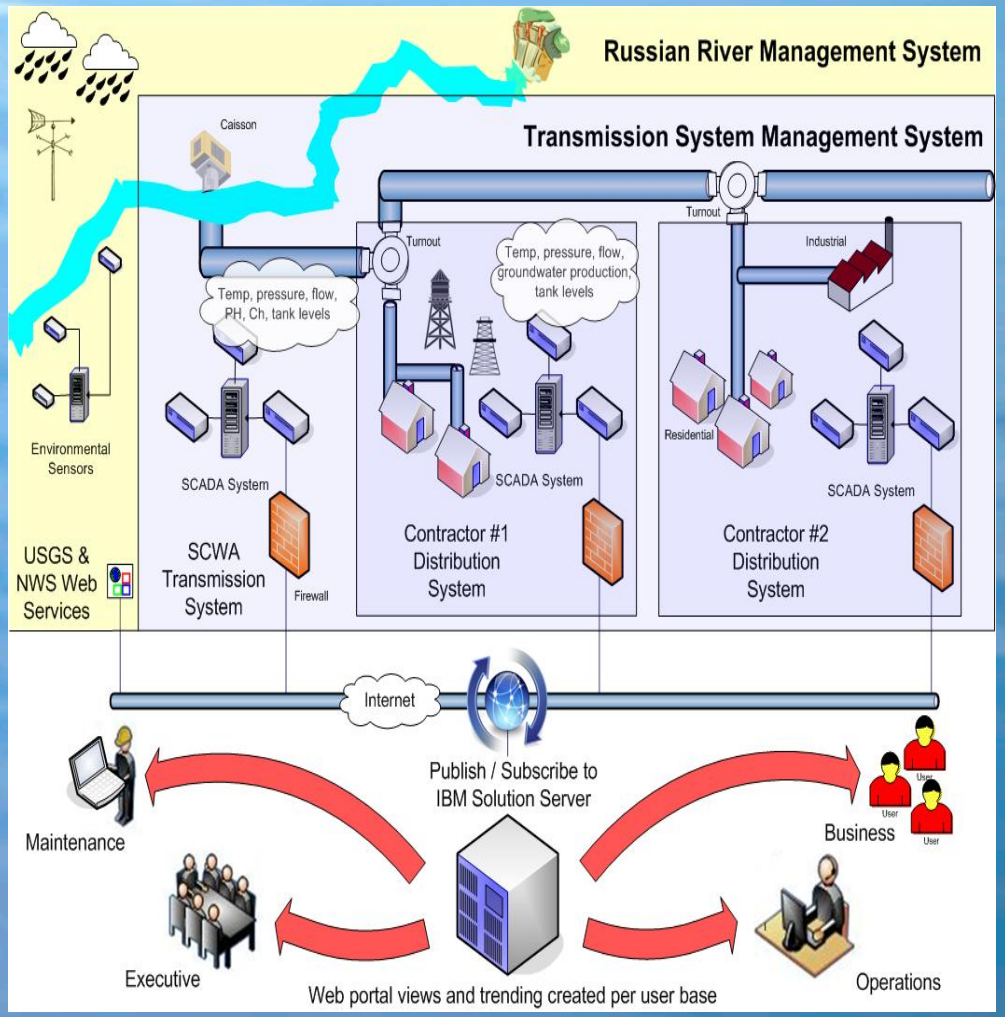
Key Projects and Initiatives
Groundwater Management Planning



- **Current Planning Efforts:**
  - Sonoma Valley
  - Santa Rosa Plain
  - Petaluma Valley
- **Stakeholders:**
  - USGS Collaboration - Modeling
  - Diverse Local Stakeholders
- **Projects:**
  - GW Banking
  - Conjunctive Flood Control/ Water Supply Facilities

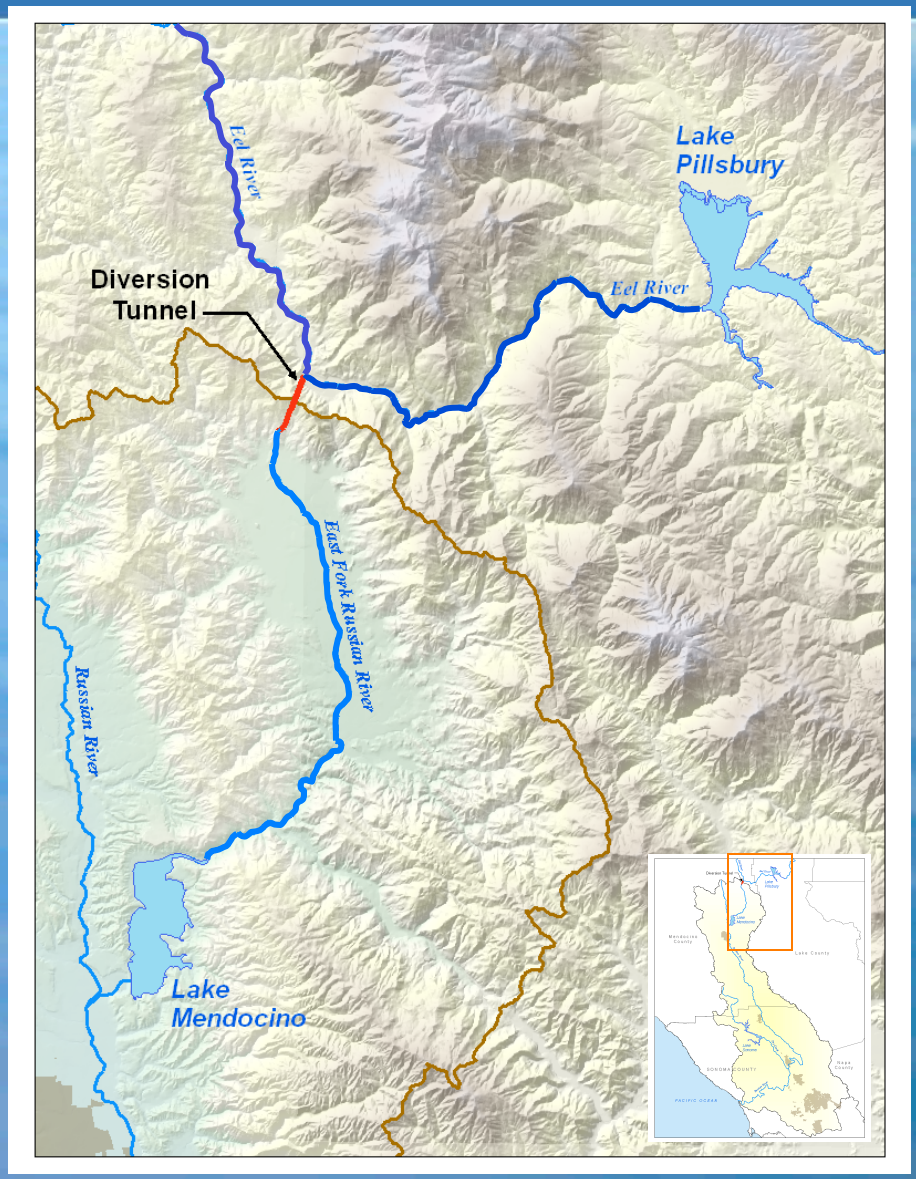
Key Project and Initiatives Collaboration Platform

- Partnership with retail water suppliers & IBM
- First phase integrates monitoring of systems to improve water/energy use efficiencies
- Planned future integration with agriculture (weather stations) &other data sources
- Possible emergency response support tool
- Users include operators, planners, & decision makers

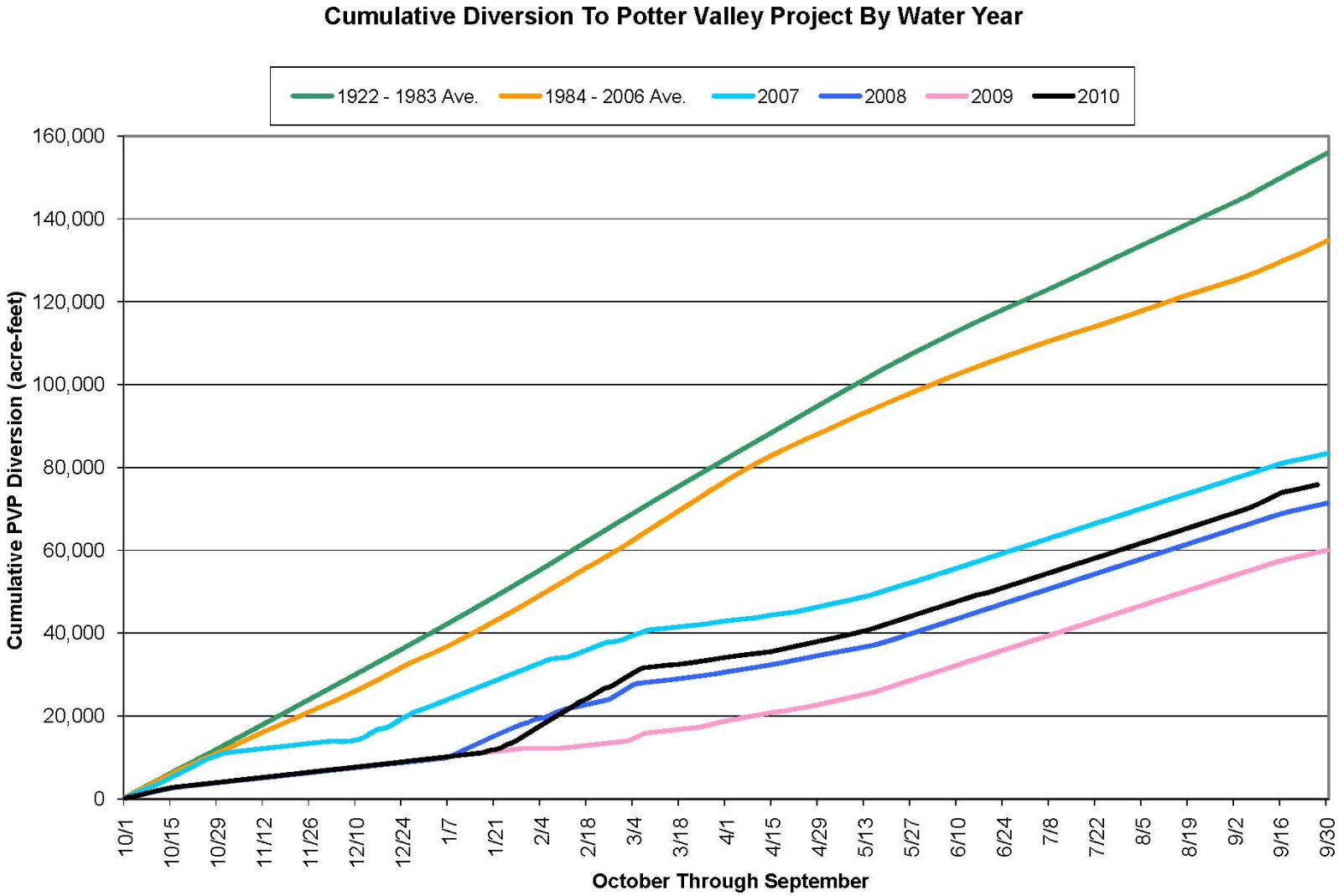


Critical Issues: Potter Valley Project

- Lake Pillsbury & Potter Valley Project <u>Operated by PG&E</u>
- Potter Valley Diversions:
  - Maximum 300 cfs (595 acre-feet per day)
- Releases are decreasing in recent years due to revised PG&E operations under FERC license



Critical Issues: Decreasing Releases To Potter Valley



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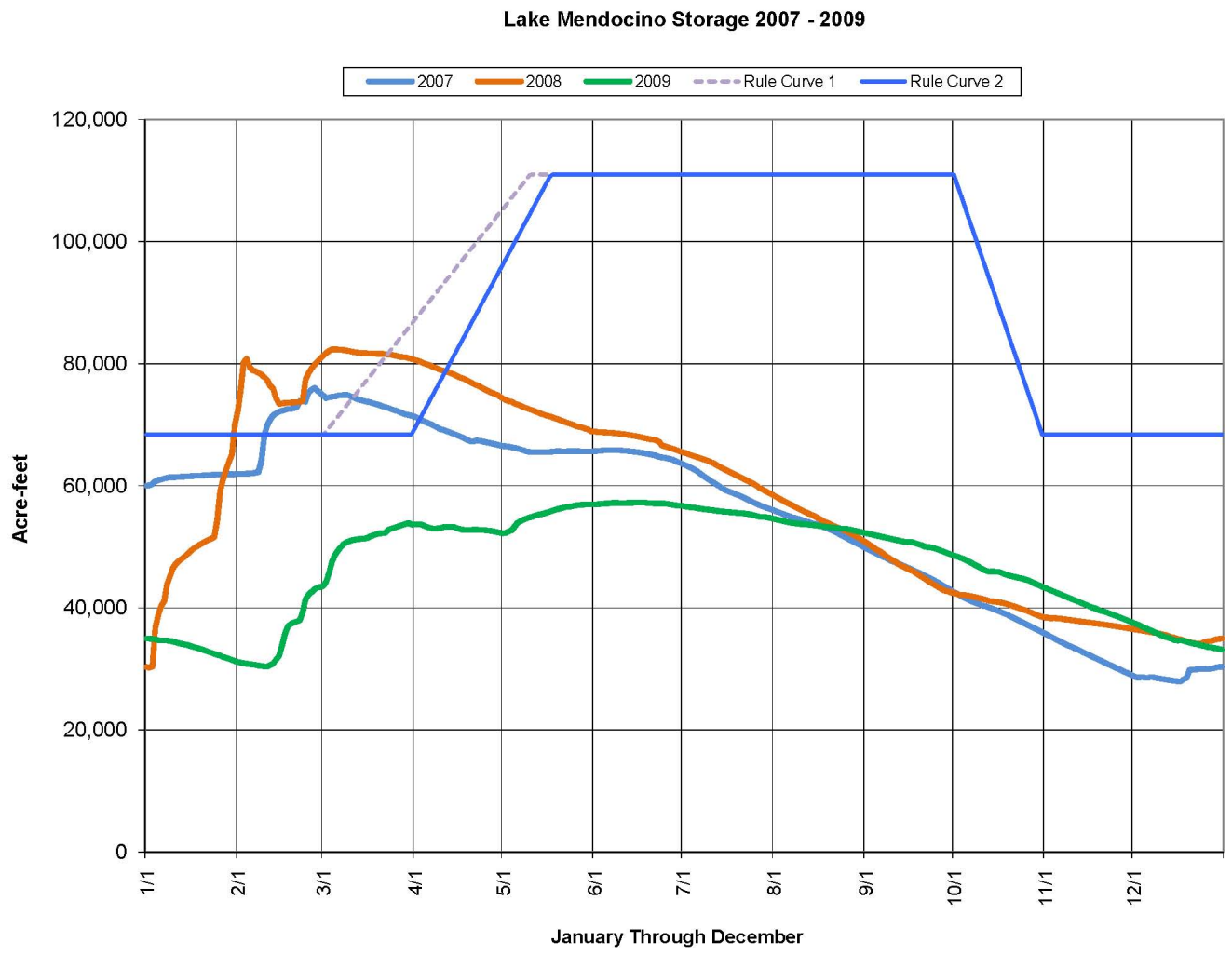
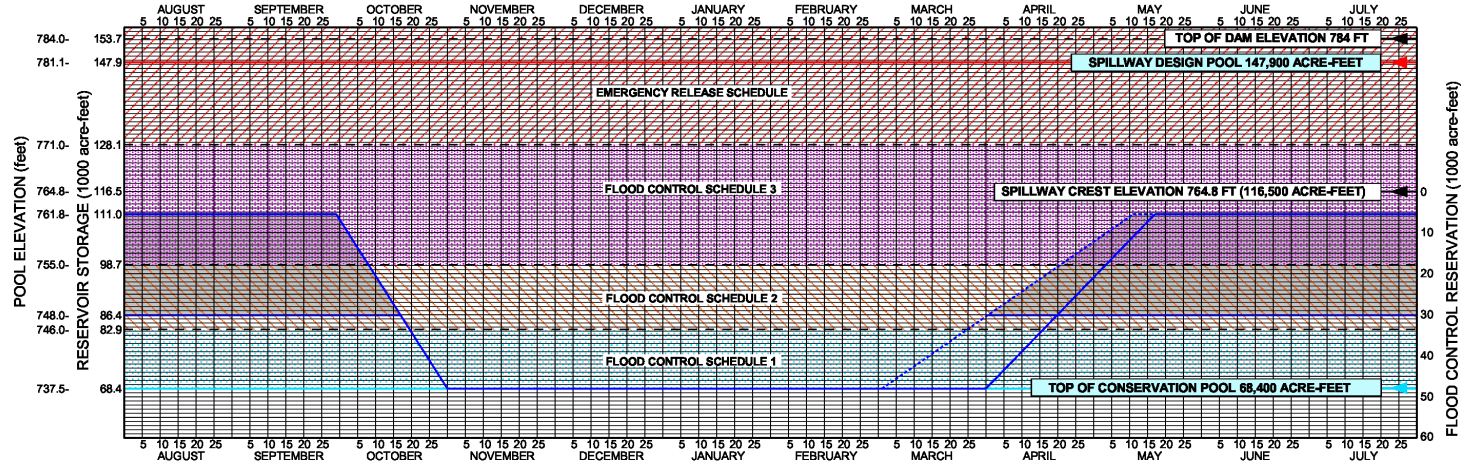


Critical Issues: Lake Mendocino Operations



RELEASE SCHEDULES

WATER SUPPLY SCHEDULE
As directed by the Sonoma County Water Agency

FLOOD CONTROL SCHEDULE 1, Pool elevations reached between 737.5 and 746.0 feet
Release up to a max of 4,000 cfs depending on antecedent ground conditions and time of year; subject to Limitations 1 thru 4, shown hereon.

FLOOD CONTROL SCHEDULE 2, Pool elevations reached between 746.0 and 755.0 feet
Release up to a maximum of 4,000 cfs subject to Limitations 1 thru 4, shown hereon.

FLOOD CONTROL SCHEDULE 3, Pool elevations reached greater than 755.0 feet
Release up to a maximum of 6,400 cfs subject to Limitations 1 thru 4, shown hereon.

EMERGENCY RELEASE SCHEDULE

Pool Elevation (feet)	Gate Releases (cfs)
764.8 - 771.0	0
771.0 - 771.3	800
771.3 - 771.5	1,700
771.5 - 771.8	2,500
771.8 - 772.0	3,300
772.0 - 772.3	4,200
772.3 - 772.5	5,000
772.5 - 772.8	5,800
772.8 - 773.0	6,600
773.0 and above	7,500 (gates 100% open)

NOTES:

1. Gates may be used when the pool is above spillway crest (elevation 764.8 feet) for Flood Control Schedule 3 releases; however, the sum of the spill and the releases must not exceed 6,400 cfs (i.e. - outlet discharge is reduced as spillway discharge increases), and should not exceed Limitations 1 thru 4, shown hereon, to the extent possible.
2. The Corps of Engineers will reduce the flood control space on the 1st of March if it is determined the flood control functions of the project will not be impaired.
3. Normally, the summer pool elevation will be kept at 748.0 feet to maximize recreational opportunities at the lake; however, Sonoma County Water Agency retains the right to raise the summer pool elevation to 761.8 feet based on demonstrated demand and NEPA criteria being met.
4. Pertinent reservoir pool elevations correspond to the following reservoir storages:

737.5 ft	68,400 acre-feet	Top of Conservation Pool
746.0 ft	82,900 acre-feet	
748.0 ft	86,400 acre-feet	Summer Pool
755.0 ft	98,700 acre-feet	
761.8 ft	111,000 acre-feet	
764.8 ft	116,500 acre-feet	Spillway Crest
771.0 ft	128,100 acre-feet	
781.1 ft	147,900 acre-feet	Spillway Design Pool
784.0 ft	153,700 acre-feet	Top of Dam

LIMITATIONS

1. The rate of change for flood releases will be as follows when the pool elevation is at or below 764.8 ft:

Flow Range	Max Rate (cfs/hr) falling	rising
minimum - <250	25	1000
250 - <1000	250	1000
1000 - 6400	1000	2000

2. When flow at the Russian River near Ukiah gage exceeds 2,500 cfs and is rising, flows in the Russian River will be monitored hourly so that reductions in releases from Coyote Valley Dam can be made to ensure dam operations will adhere to all other limitations and operating criteria.
3. Flood releases which contribute to flows greater than 8,000 cfs at the Russian River near Hopland gage, will not be made, insofar as possible. Also, releases will be limited to the discharge that results in flow at the Russian River near Hopland gage being less than that reached during the previous storm or storm series. The previous storm or storm series is defined as an event(s) separated by no more than 10 days, which caused the highest flow at the specified gage location above.
4. When the National Weather Service QPF is 1 inch or more for the next 24 hours or 1/2 inch or more for any 6-hour period in the next 24 hours, flows in the Russian River will be monitored hourly so that reductions in releases from Coyote Valley Dam can be made to ensure dam operations will adhere to all other limitations and operating criteria.

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1. Releases from the lake will be made in accordance with the highest schedule reached during the current or previous storm or storm series, shown hereon, subject to the applicable limitations.
2. Depending on conditions prevailing at the time, the Corps of Engineers District may direct that flood releases be increased or decreased from those required by this diagram without requiring a deviation.

Developed by PEP/BJA - Prepared by JSM

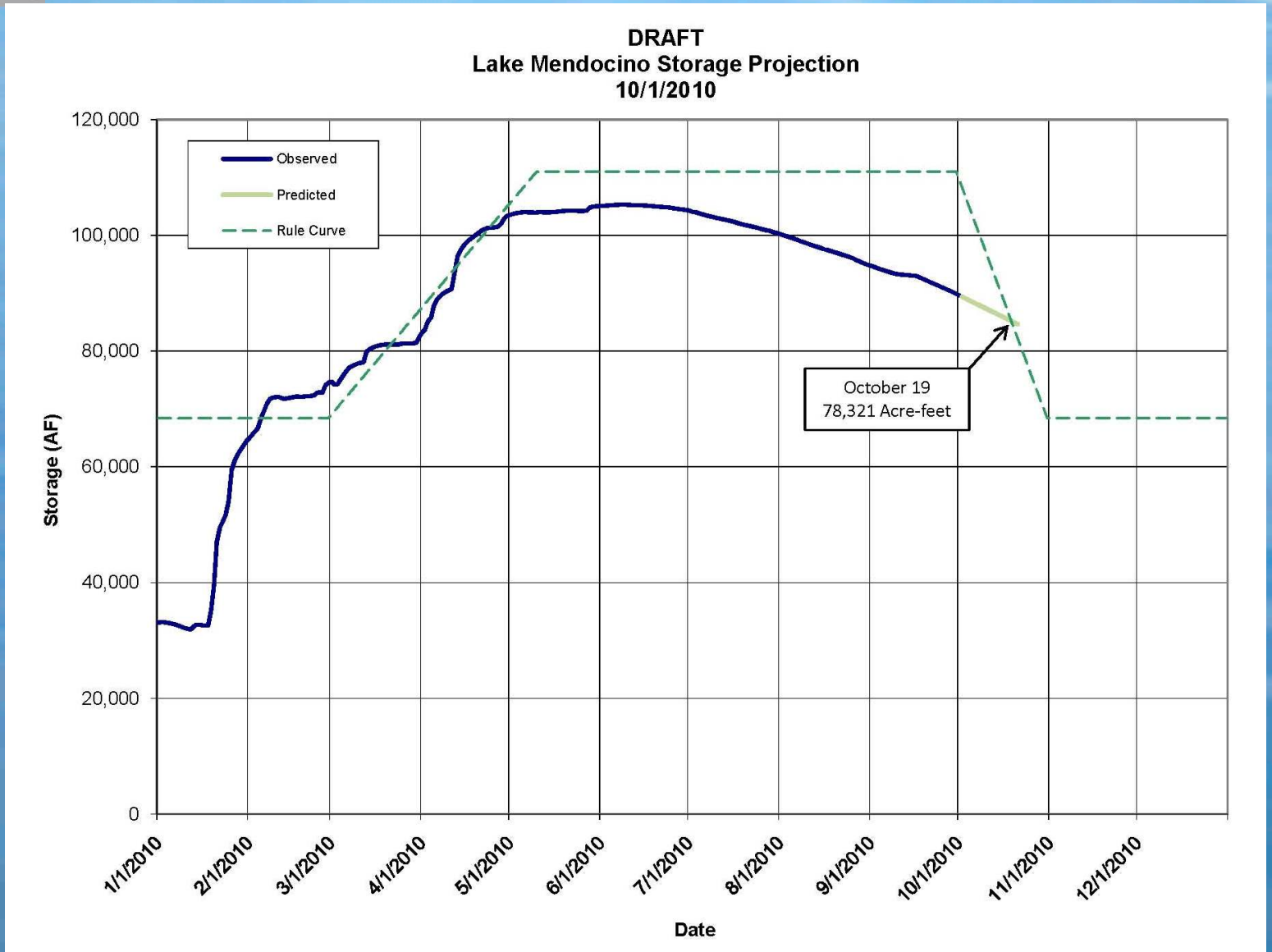
COYOTE VALLEY DAM - LAKE MENDOCINO
RUSSIAN RIVER, CALIFORNIA

WATER CONTROL DIAGRAM

U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
(Water Management by Sacramento District)

Revised Jan 2004 PLATE A - 10

Critical Issues: Lake Mendocino Operations



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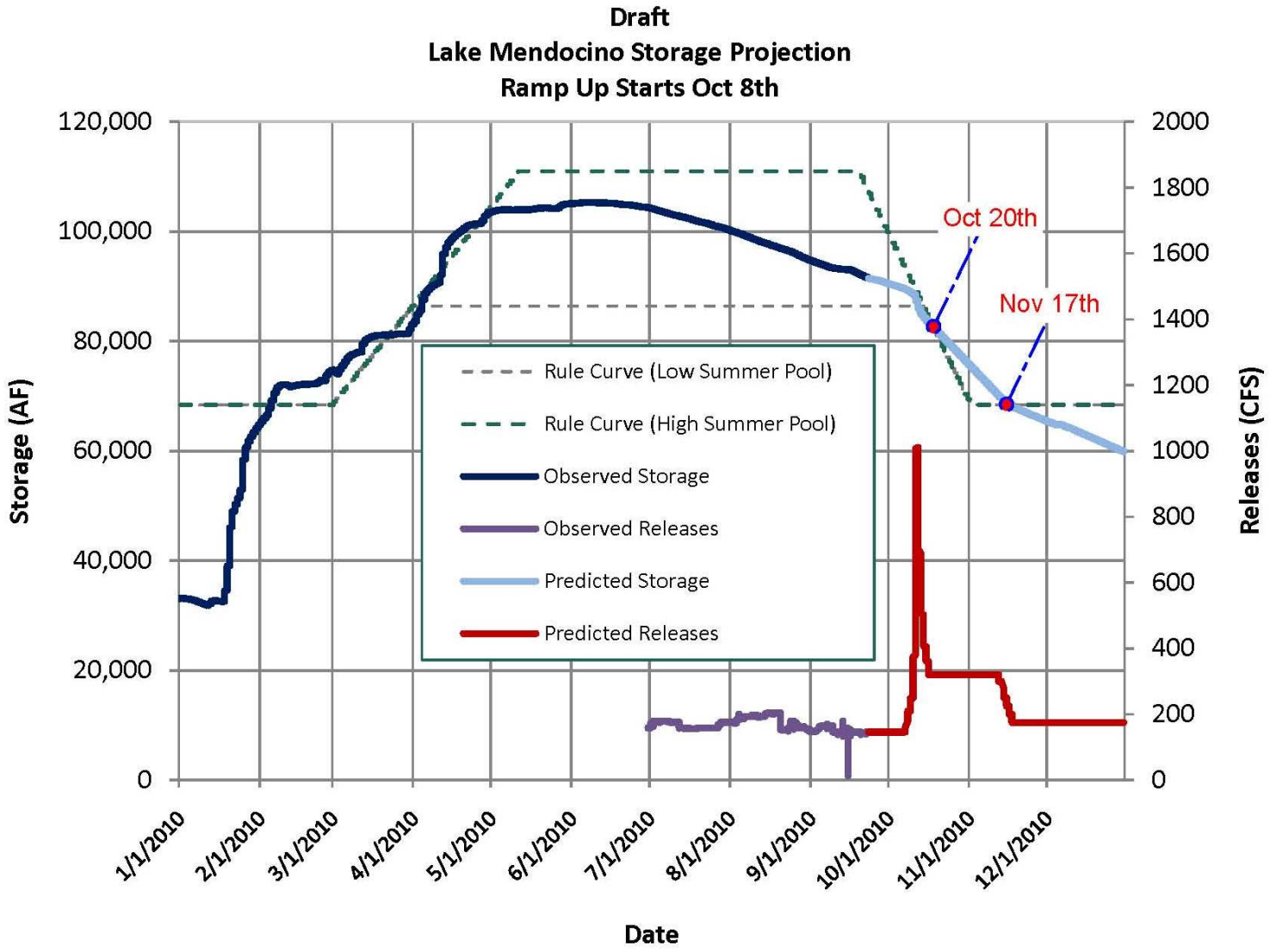

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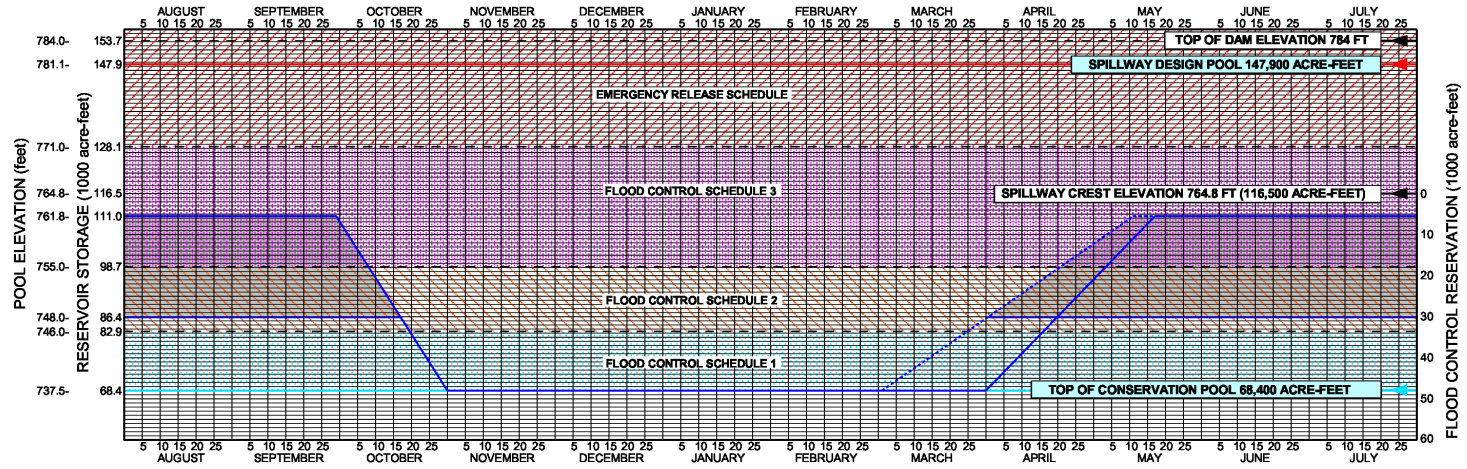

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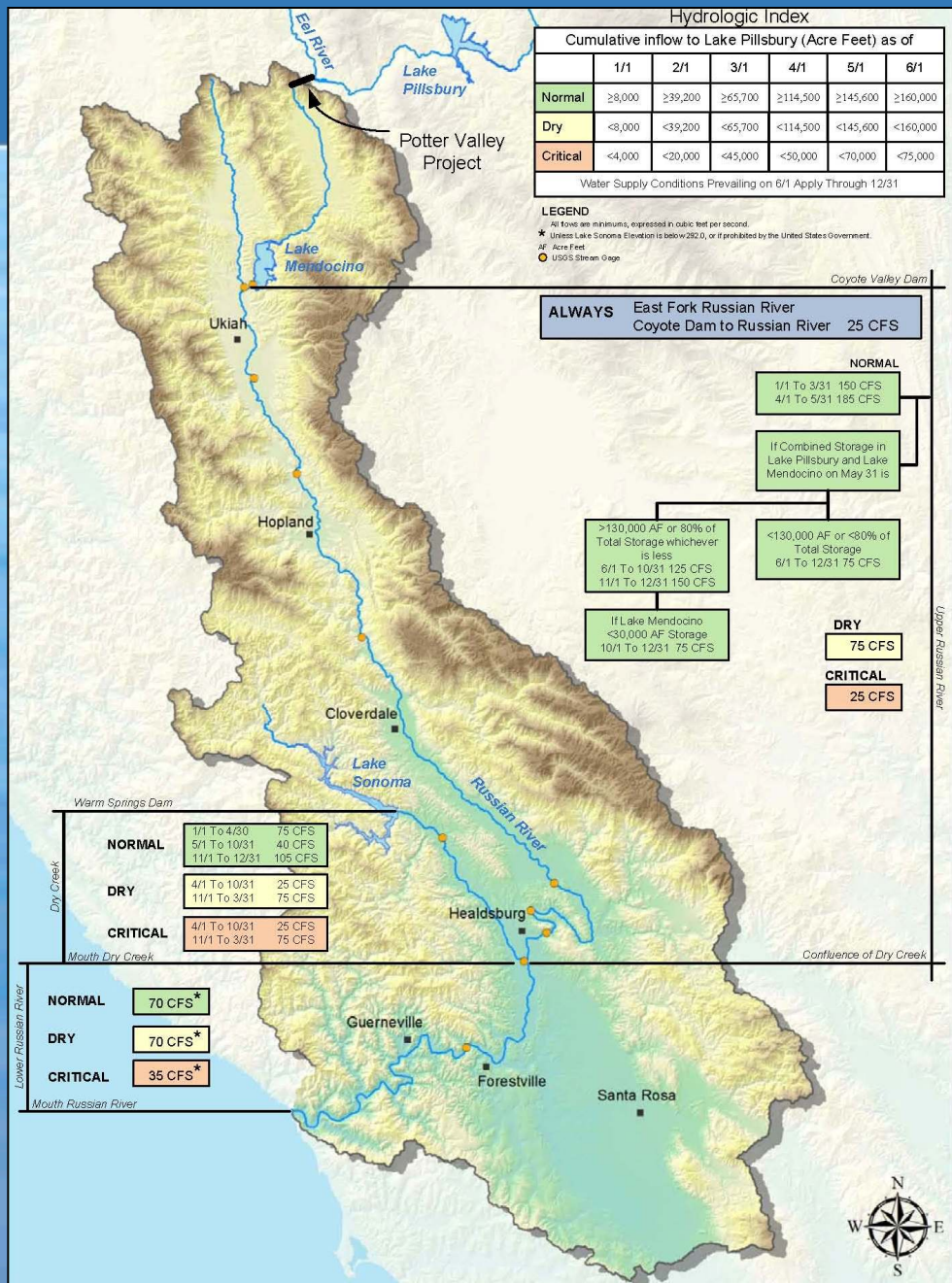
U.S. ARMY CORPS OF ENGINEERS
SAN FRANCISCO DISTRICT
(Water Management by Sacramento District)

Revised Jan 2004 PLATE A - 10

Critical Issues: Russian River Flows

Modification of D1610 Minimum Instream Flow Requirements

- Reduce minimum flow requirements
- Hydrologic Index more relevant to Russian River hydrology.
- Improve summer fish habitat.



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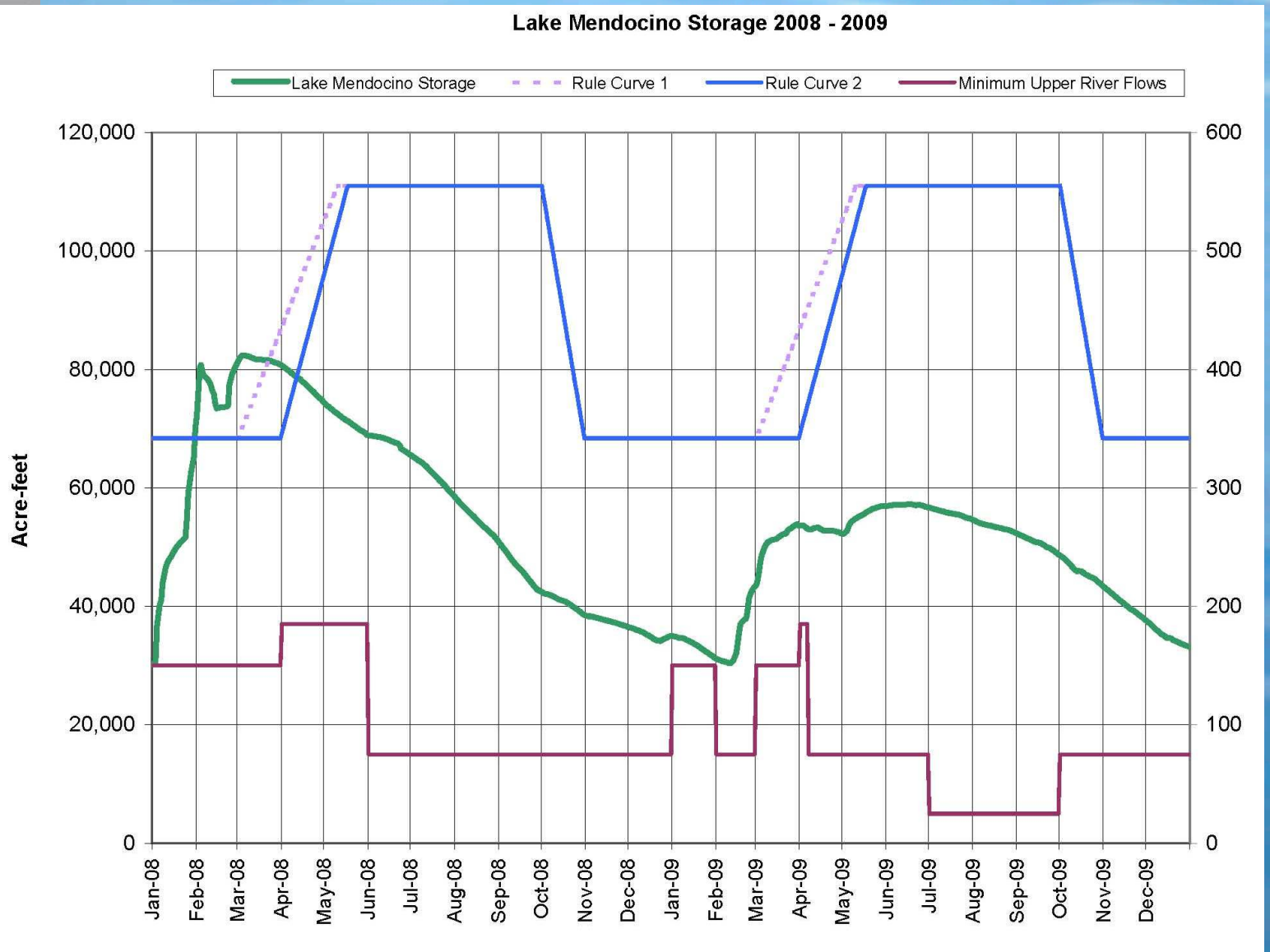

Lake Mendocino Operations

- **Existing Conditions:**
  - **Vulnerable to Dry Spring Conditions**
  - **Reduced diversion from the Potter Valley Project**
- **Climate Change**
  - **Precipitation**
  - **Seasonality**
- **Large group of stakeholders**
  - **SCWA Contractors**
  - **Other cities**
  - **Agriculture – $8 Billion Wine Industry**
  - **ESA Listed Fish**